Research Article

ASSESS THE EFFECTIVENESS OF TEACHING MODULE ON NON CHEMICAL METHODS OF MOSQUITOES BITE PREVENTION

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ARTICLE INFO	ABSTRACT
	Introduction The Mosquito bite causes unpleasant feelings to the human being, Mosquitoes are mediated for the development of diseases in all age groups. Recently, some studies reported that majority of children are suffering from these vector burn diseases. The **aim of the study to determine** the effectiveness of health teaching module on non chemical method to prevent the mosquito bite. **Method and material** 60 under five mothers were recruited by purposive sampling technique and one group pretest and post test design was adopted Data was collected by 30 knowledge questionnaires. **Result,** data were analyzed by SPSS 16 version, 15,73% had inadequate knowledge in pretest and after intervention 53% had adequate knowledge. Similarly 25.38 had pretest mean and 46.53 had post test mean, hence the mean difference in pretest and post test was 21.15 and mean percentage 35.25%, similarly, t value -15.88 at 0.00 levels. The researcher **concluded** that health education module on non chemical methods of mosquitoes bite were more effective for prevention of vector burn diseases.

INTRODUCTION

Mosquito bit is always interpreting the normal human activities and it may cause the disease such as dengue or malaria other vector born diseases. Mosquitoes are more attracted to blood, because blood containing protein. These proteins may help in the development of their egg, these egg were transmitted from human to another human, ultimately which transfer to other human. There are very few vaccines are available to treat these vector born diseases, the Scientist, doctors and other scholar from various part of the world has been continually putting effort to find out the solution for these deadly vector born diseases. Hence, the best way is for the people to minimize the mosquito bite, so that natural methods can be used to protect human from mosquito bites.

Various research studies shows that diseases remain an unsolved issues and increase the death, some study depicts that mosquito alone causes the more than 700 million persons annually. However a vector borne disease is major health issues in tropical and subtropical countries and it is major health issues among vulnerable population like children and pregnant mother, although different part of the world had been trying for the appropriate intervention to reduce this vector borne problem. Recently, commercially available insect repellents are used to protect from these diseases, but under developing countries and rural people are not affordable for these costs, hence, these populations are depending on non chemical methods, these are simple, economical, easily available at all time, so that they have been using these natural insect repellents to protect from mosquito bites. In vector-borne disease id a challenging health issues so that the government of India was initiated various vectors borne health program to control these diseases. Health awareness of public is a major step to control these diseases and integrate health care workers who are at peripheral area and non government origination are very important role in better outcomes, hence prevention is better than cure.

An evaluative study was conducted in June 2008 among the military personnel who often go in missions in the middle of the Jungle, in the Amazon region, fifty one samples were included in this study, the finding of this study shows that 63,7% of the militaries used products that contained Deet in the maximum concentration of only 15% that has minimum repellent action; 36% reported to combine these products with sun protective products which increased the risk of intoxication; 36,4% used a natural repellent during their

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missions; two of the militaries participants used vitamin B and considered their repellent action ineffective. Natural repellents that have "andiroba" and" copaíba" as components presented a higher perception of protection from the participants. (RibasI & CarreñoII, 2010)

This study was conducted in 2017,it mainly concerned with to determine the effectiveness of environmental factors such as fabric type, washing, sunlight, and temperature on permethrin content in treated clothing with respect to mosquito knockdown and mortality. . All fabrics used in this study were treated with permethrin at a concentration of 125 µg/cm. Denim fabrics having no washes and no light exposure showed the highest amount of permethrin. Washing and light exposure significantly reduced the ability of permethrin-treated fabrics to induce mosquito knockdown and/or mortality under the simulated conditions used for this test. Temperatures tested did not affect permethrin content or mosquito knockdown and mortality. Long-lasting impregnation of uniforms protects against mosquito bites under simulated laboratory conditions. Employers and employees should consider the use of permethrin-impregnated clothing and uniforms in addition to daily repellent sprays. (Richards SL, 2017).

This qualitative research study was conducted in two rural areas and two peri-urban areas located in Kilombero Valley in south-eastern Tanzania. Eight focus group conducted semi structure interview by help of semi structured question. The Interviews and discussions focused on (1) community knowledge of malaria transmission, and (2) the role of such knowledge on outdoor malaria transmission as a contributing factor to residual malaria transmission. The result of this study shows that the use of bed nets for malaria prevention has been stressed in a number of campaigns and malaria prevention programmes. House structure, poor ventilation and warm weather conditions were reported to be the main reasons for staying outdoors during the evening. Participants reported wearing long sleeved clothes, fanning and slapping themselves, using repellents, and burning cow dung and neem tree leaves to chase away mosquitoes. Conclusions: Community understanding of multiple prevention strategies is crucial given changes in mosquito host seeking behavior and the increased incidence of outdoor biting. Improved community understanding of outdoor malaria transmission is critical: efforts to reduce or eliminate malaria transmission will not be successful if the control of outdoor transmission is not emphasized. (Moshi1, 2017)

The study was conducted in Maxico, aim of study to determine use of repellents to prevent insects from landing and biting is a common practice. This study evaluated the repellency and protection time of 16 synthetic and 13 natural-based commercial products against *Aedes aegypti*, from an endemic dengue area in Central Mexico. Tests were conducted by three adult volunteers. The result shows that natural-based products did not repel mosquitoes for >30 min. These results show that most of the repellent products did not provide satisfactory levels of personal protection against mosquito bites. Frequent reapplication of repellents (synthetic and natural-based) may compensate for their short duration of action. Repellent efficacy data must be integrated into the decision-making process for an optimal response to the local (or specific region) situation. (Kuri-Morales, 2017).

A descriptive study was conducted in 2016 among 573 pregnant mother in Greece, self-completion questionnaires used for collect data, traveling abroad the last six months was declared by 10.5% and 13.0% of pregnant women and their male sex partners, respectively, while 77.4% (441/570) had heard about Zika virus disease (ZVD). A lack of knowledge about sexual transmission of ZVD was identified in 63.3% of pregnant women, and 24.1% of responders did not know the risks to the fetus and baby. Approximately 73% of responders believed that the mosquito bites can affect their fetus and baby and 18% did not take measures to prevent mosquito bites routinely. Traveling abroad with a male sex partner over the last six months correlated (OR = 2.05, 95% CI = 0.99–4.23) with responding correctly to the four key questions about the transmission of ZVD through mosquito bites, the risk of microcephaly, and the risks of traveling to the affected countries. In conclusion, we found considerable knowledge gaps related to ZVD among Greek pregnant women. These study results are useful in targeting pregnant women for the prevention of potential Zika virus infections. (Mouchtouri, 2017)

A study was conducted from June 2011and May 2012, the researcher noticed the net usage of residents, their hours of house entry and exit and times of sleeping were recorded and the individual hourly exposure to vectors indoors and outdoors was calculated. Using these data, the true protective efficacy of nets for this population was estimated, and compared between genders, age groups and from month to month. The result shows that Results: Primary vector species were more likely to feed indoors, but the secondary vector Anopheles coustani demonstrated exophagic behaviour (p < 0.05). A rise in vector biting activity was recorded at 19:30 outdoors and 18:30 indoors. Individuals using LLINs experienced a moderate reduction in their overall exposure to malaria vectors from 1.3 to 0.47 bites per night. Conclusions: In the present study, LLINs offered the local population partial protection against malaria vector bites. However, the overlap of early biting habit of vectors and human activity in this region indicates that additional methods of vector control are required to limit transmission. Regular surveillance of both vector behaviour and domestic human-behaviours patterns would assist the planning of future control interventions in this region. (Cooke1, 2015)

This study was conducted in 75 villages in Asembo, western Kenya from June and July of 2011.data collections were separated by hour of the night, and mosquitoes were identified to species and tested for sporozoite infection with Plasmodium falciparum. The result shows that R 1,960 Anopheles mosquitoes collected in 2011, 1,267 (64.6%) were morphologically identified as An funestus, 663 (33.8%) as An. gambiae sensu lato (An. gambiae s.s. and An. arabiensis combined), and 30 (1.5%) as other anophelines. Of the 663 An. gambiae s.l. collected, 385 were successfully tested by PCR among which 235 (61.0%) were identified as An. gambiae s.s. while 150 (39.0%) were identified as An. arabiensis. Compared with data collected before the scale-up of ITNs, daily entomological inoculation rates (EIRs) were consistently lower for An. gambiae s.l. (indoor EIR = 0.432 in 1985–1988, 0.458 in 1989–1990, 0.023 in 2011), and An. arabiensis specifically (indoor EIR = 0.532 in 1989–1990, 0.039 in 2009, 0.006 in

2011) but not An. funestus (indoor EIR = 0.029 in 1985–1988, 0.147 in 1989–1990, 0.010 in 2009 and 0.103 in 2011). Sporozoite rates were lowest in 2009 but rose again in 2011. Compared with data collected before the scale-up of ITNs, An. arabiensis and An. arabiensis and An. funestus were more likely to bite outdoors and/or early in the evening, However, when estimates of human exposure that would occur indoors or while asleep in the absence of an ITN were generated based on human behavioral patterns, the changes were modest with >90% of exposure of non-ITN users to mosquito bites occurring while people were indoors in all years. The proportion of bites occurring among non-ITN users while they were asleep was ≥90% for all species except for An. arabiensis. For this species, 97% of bites occurred while people were asleep in 1989–1990 while in 2009 and 2011, 80% and 84% of bites occurred while people were asleep for those not using ITNs. Assuming ITNs prevent a theoretical maximum of 93.7% of bites, it was estimated that 64-77% of bites would have occurred among persons using nets while they were asleep in 1989– 1990, while 20-52% of bites would have occurred among persons using nets while they were asleep in 2009 and 2011. (Bayoh, 2014)

MATERIALS AND METHODS

This study was conducted in the rural area of Mohanlalganja, Lucknow, Uttar Pradesh, from January 2017 to May 2017, target population of this study under five mothers, purposive sampling technique was used to recruit 60 samples. Before, selected the samples researcher scrutinized the sample for inclusion and exclusion criteria, one group pretest and post-test design was adopted. Ethical consideration was considered in this study before data collection written consent was obtained by medical superintendent Community Health Center Mohanlalganj and Informed consent was taken from the participants, explained the study purpose in details and clarified their doubts in their language. Data was collected after obtaining the permission from Medical superintendent, Community health centre Mohanalaganja. Participates signature were taken in informed consent sheet, explained the study benefits and risk of study in detail. Data was collected by introducing the 30 structure knowledge questionnaires, pretest was conducted in anganwadi and participates home, by administering 30 structure knowledge questionnaires, later education intervention was given to the participants regarding natural or non chemical methods of mosquito bite prevention, like mosquito nets, natural oil, and other natural mosquito repellents. After one week same 30 knowledge questionnaires were applied to the same sample. There are two types of tool were used for data collection, first tool based on the socio demographic information and other one contains 30 structure knowledge questionnaires, tool were developed by the researcher, before develop these tool researcher discussed with experts and referred the literature and previous study.

RESULT

Table 1 Pretest and posttest frequency and percentages of knowledge N-60

Knowledge Level	Range	Pretest		Post test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Inadequate	<50%	44	73.3	00	00
Moderate	50%-75%	16	26.7	25	41.7
Adequate	>75%	00	00	35	58.3

The above table number 1 shows that there was inadequate knowledge 73.3% in pretest and 26.7% had moderate, similarly after teaching intervention mothers of under five children had good 58.3% and moderate knowledge 41.7%.

Table 2 Mean Standard deviation, Mean difference Mean percentage, and t value N-60

S .N	Test	Mean	Standard deviation (SD)	Mean difference	Mean percentages	't' value	p value
1	Pretest	25.38	8.866.	21.15		-15.88	0.00
2	Post test	46.53	6.781		35.25%		

Table 2 number two shows that the pretest mean was 25.38 and 8.866 after the intervention had the post test mean 46.53 and 6.781, similarly the mean difference in pre and post test was increased at 21.15 whereas, the mean percentages at 35.25%. Paired t value -15.88 at 0.00 levels.

Table 3 shows Association of pre test knowledge scores with their selected socio demographic variables of parent on non-chemical methods of mosquito bite prevention.

N-60

S.No	Socio – demographic Variables	Category	Knowledge score				Total	χ2 cal	χ2tab (df)
			Inadequate		Moderate				
			f	%	f	%			
1	Age in year	18-21 years	15	25	03	5	18	7.845*	7.82 (3)
		22-24 years	19	31.6	13	21.8	32		
		25-27 years	10	16.6	00	00	10		
		>28 yeas	00	00	00	00	00		
2	Religion	Hindu	26	43.4	07	11.6	33	1.282 NS	5.99(2)
		Muslim	15	25	08	13.3	23		
		Christian	03	00	01	1.6	04		
		Other	00	00	00	00	00		
3	Education	< Primary	19	36.6	05	8.7	24	2.164 NS	7.82 (3)
		Secondary	19	36.6	10	16.6	29		
		Graduation	04	6.6	01	1.6	05		
		PG & above	02	3.3	00	00	02		
4	Occupation	Government	18	30	00	00	18	16.66*	5.99(2)
		Private	13	21.6	02	3.3	15		
		House wife	13	21.6	14	23.5	27		
5	Family income	< Rs 5000	29	48.4	09	15	38	2.962 NS	5.99(2)
		Rs 5001-10000	15	25	06	10	21		
		Rs >10001	00	00	01	1.6	00		
6	Number of children	One child	23	38.3	09	15	32	.075 NS	3.84(1)
		Two children	21	35	07	11.7	28		
		>Two children	00	00	00	00	00		
7	Type of family	Nuclear	30	50	14	23.3	44	2.239 NS	3.84(1)
		Joint	14	23.3	02	03.4	16		

* *Significant difference,* **NS-***Non significance,* χ2*- Chi-square, df-degree of freedom*

Table 3 explained baseline variable of all seven items. The majority of under five mothers, age group between 22-24 years (32), 31.6% same age group had inadequate knowledge and 21.8% had moderate knowledge. Most of mothers from Hindu, 43.4% had inadequate knowledge and 13.3% from Muslim had moderate knowledge. The majority of participants were completed secondary (29), primary and secondary education, 36.6% had inadequate knowledge and 16.6% mothers had moderate knowledge and they were completed secondary education. Most of the mothers of under five children were housed wife (27), mothers who are doing private job and house wife had equal inadequate knowledge 21.6%, whereas, 23.5% house wife had moderate knowledge. Based on income majority of participants had less than Rs 5000 per month (38), 48.4% had inadequate knowledge and 15% had moderate knowledge. Majority of mother had one child (32), 38.3% had inadequate knowledge and 15% had moderate knowledge. Under five mothers belongs to the nuclear family (44), 59% had inadequate knowledge and 23.3% had moderate knowledge

The association of knowledge level of mothers with selected demographic variables reveals that there is a statistical significant association of Pre test knowledge of under five mothers compare the age and occupation with their corresponding Chi-square value found to be 7.845*, 16.66*, respectively in Pre test at 5% level of significance. There is no significant association between income, type of family, education, residency, number of children.

DISCUSSION

Obtained result determined that people should be motivate regarding the mosquito bites and its prevention, this research study shows that, 35.25% mean percentages in pretest and post knowledge score, therefore, stated research hypothesis was accepted (RH1) "There will be a significant difference between pretest knowledge and post test knowledge regarding the non chemical method of mosquito bite prevention "

Baseline demographic variables show that there was a significant difference in age of the mother and occupation, the majority of under fiver mothers (27) had housewife so that house wife under five mothers had adequate knowledge regarding natural method of mosquito bite prevention, other variable are not associated with pretest knowledge. The researcher concluded that there should be a health awareness program in peripheral level and strengthen peripheral care health care sector by proving the adequate health resources. Hence research hypothesis accepted (RH$_2$) There is no significant difference between pretest knowledge and socio demographical variable.

So that health care workers should organize the health awareness camps and encourage the non government organization for development of the general health population. Hence, government to be developed various health programs related to vector borne diseases. Majority of Indian population residing in rural areas so that public sectors should be strong at the peripheral level.

CONCLUSION

The effectiveness of health teaching and learning activities which help to control of vector born diseases. Health education is pioneering in the health care system, so that the government of Indian should provide more resources at peripheral level. This study concluded that prevention is better than cure, various natural methods are used to prevent the mosquito bites, and health care personnel guide them in appropriate techniques of non chemical methods to minimize the mosquito bites.

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